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Curriculum Management

Resource Guide 1988

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Curriculum Management

This booklet is intended primarily for the use of school board personnel in charge of curriculum management activities. The ideas and suggestions are applicable to both the French- and English-language sections of school boards. The roles and responsibilities of principals, teachers, and consultants in local curriculum review, development, and implementation at all levels are acknowledged and their vital participation is recognized. The ministry, however, has prepared this booklet mainly for the use of supervisory officers, under whose authority the curriculum activities are conducted.

The ministry recognizes that over the past several years many educators have invested a great deal of time and energy in local curriculum activities, which is a credit to all concerned. Boards of varying sizes from all parts of the province have contributed to the wealth of material that was used in preparing this document. The ministry gratefully acknowledges this contribution, as well as the willingness of boards to share their ideas with others. This resource guide, then, is an amalgam of theory, practice, and policy, which reflects the input received from a variety of boards, institutions, and organizations throughout Ontario. The recent publication by the Ontario Institute for Studies in Education, entitled Planned Educational Change *and developed in tandem with this booklet, forms a useful companion document, particularly at the school level.*

While the ministry provides direction and support in the curriculum process, "the major challenge falls to educators at the local level to translate the objectives into relevant learning experiences for each of our children."

The Formative Years, 1975, page 1.

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I. Introduction

Curriculum Management in Ontario

Since the early 1970s the curriculum process has received continuous attention from educators in Ontario. Their interest has focused, in turn, on each of the main phases of the process: review, development, and implementation. To clarify and direct the curriculum process the Ministry of Education, in September 1982, distributed a discussion paper entitled "Curriculum Policy: Review, Development, Implementation". An analysis of the responses to that discussion paper, subsequent provincial monitoring of curriculum policy, and the ongoing commitment to the curriculum process by school boards have made it clear that the quality of education to which young people are exposed within a school system is directly related to the effectiveness of the curriculum process within that system. Such a process, though unique for each school board, provides administrators and trustees with established priorities for board initiatives and detailed plans for the development and utilization of resources to meet local student needs. The ministry encourages each school board in Ontario, including the French- and English-language sections where appropriate, to have in place a well-articulated, system-wide Curriculum Review, Development, and Implementation (CRDI) process.

Purpose of the Curriculum-Management Resource Guide

The purpose of this resource guide is to help supervisory officers who are responsible for educational programs in local jurisdictions to deal effectively with the CRDI cycle as they develop and refine local curriculum-management procedures. This guide will also provide a focal point for discussions and seminars, and for greater co-operation among school boards throughout the province. Specifically, the guide has been prepared to assist school board administrators to facilitate CRDI initiatives in both the French- and English-language sections by:

- emphasizing ministry policies with respect to the curriculum process;
- interpreting the concept of the CRDI cycle as a process for planned change;
- focusing the CRDI process on leadership, personnel development, teaching strategies, and in-service education as well as on the development of documents;
- stressing the importance of professional development within the CRDI cycle;
- identifying a network of personnel involved in the curriculum process;
- providing curriculum-planning and -implementation ideas for school board personnel;
- promoting the development of systems for the monitoring and support of curriculum changes;
- reinforcing the basic assumptions which underlie curriculum design;
- maintaining the focus of curriculum on students.

Historical Perspective

Over the years educators have increasingly directed their attention to the curriculum process. In the late 1800s Egerton Ryerson established the "book system" when he introduced the *Irish National Reader* to Ontario education. The 1937 program of studies, "the grey book", stressed curriculum as an active process:

> *Learning takes place most effectively when the interest of the learner is aroused.... Skills involved in communicating emotions and ideas to others, and receiving communications from them are provided for in English, Arithmetic, Art and Music.... All learning involves activity and effort on the part of the learner.... Thinking, reflecting, planning are as truly "activities" as making a box or acting in a play.* (Programme of Studies for Grades 1 to 6 of the Public and Separate Schools, 1955, *page 8*)

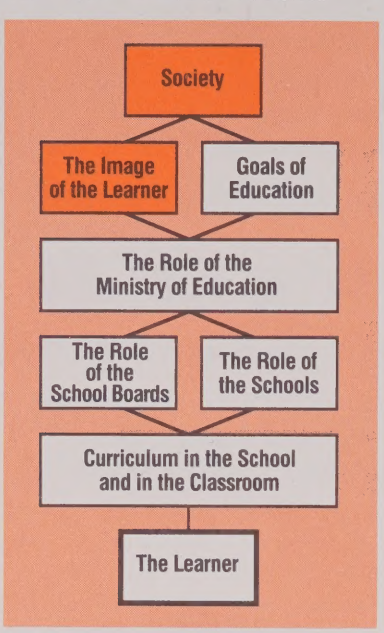
In the 1950s, the Hope Commission on Education, with its concern for the development of language, and the "Porter Plan", incorporating the concept of school divisions (to replace grades), provided the stimulus for curriculum renewal. It was during this period that, with the encouragement of the Department of Education, local curriculum committees and provincial co-ordinating committees were formed.

In the 1960s the Ontario Department of Education issued the P1J1 Interim Revision of the "grey book". This revision, and the ensuing creation of secondary-school guidelines, prompted school boards to undertake significant curriculum-development activity. This activity was further heightened by the provincial program development seminars held by the Ministry of Education along with the subsequent release of circulars *H.S.1: Ontario Secondary School Diploma Requirements* and *P1J1: The Formative Years*. In the 1970s, the educational community and the public at large expressed concern about the lack of impact of curriculum-development activities at the classroom level. Attention was thus shifted to the review (evaluation) phase of the curriculum process. In response to these concerns the Ministry of Education introduced the "Co-operative Evaluation and Development of School Systems" (CEDSS) model; the ministry resource document *Evaluation of Student Achievement;* and the formalized review processes at the provincial, regional, and school board levels.

In recent years, several developments have led to a need for reviewing and clarifying curriculum concepts, policies, processes, and responsibilities at both the provincial and the local levels. These developments include:

- a demand by the public for increased responsiveness and accountability on the part of educators;
- economic and technological changes as they affect school programs;
- a concern for the quality of new programs introduced into the schools;
- an emerging consensus in the educational community on the cyclic nature of review, development, and implementation functions;
- many new or revised publications focusing on implementation and evaluation;
- indications, from research and reviews, that school boards have experienced widely varying degrees of success in addressing curriculum review, development, and implementation.

Figure 1: *Summary of the Curriculum Process in Ontario*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This process encompasses a wide range of involvement, from the broadest level, society in general, to the most particular, the individual learner.

Summary of the Current Curriculum Process in Ontario

A summary of the current curriculum process in Ontario is outlined in Figure 1. This process encompasses a wide range of involvement, from the broadest level, society in general, to the most particular, the individual learner.

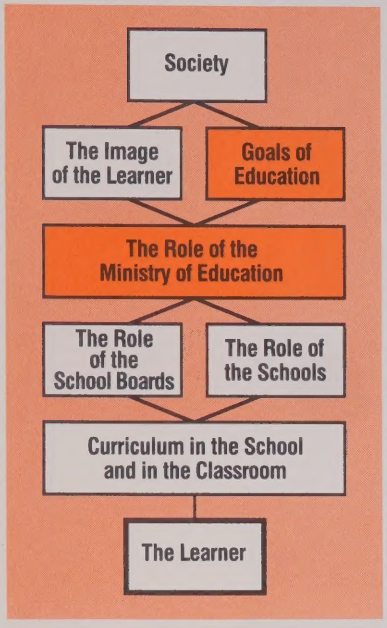
Society

The values of a society are both *reflected* and *shaped* by its educational system. In its reflecting role, education must honour the values and ideals considered important by society; in its shaping role, education must provide leadership and vision. An educational system that assumes these two roles must be based on an understanding of what society is and what it may become.

The Image of the Learner

The curriculum in Ontario schools is designed to foster the development and well-being of the learner. Curriculum should therefore be planned and adjusted to suit the students' individual talents, needs, and interests, as well as to encourage co-operative and collaborative learning. The Ministry of Education recognizes that Ontario students exhibit the full range of human diversity and potential and that the image of the learner presented below is an ideal picture only.

> *The image of the learner implicit in Ministry of Education guidelines and policy statements is complex. Recognizing the diversity of individual abilities and interests, the ministry views the learner as an active participant in education who gains satisfaction from the dynamics of learning. The concept of the learner as a mere processor of information has been replaced by the image of a self-motivated, self-directed problem-solver, aware of both the processes and uses of learning and deriving a sense of self-worth and confidence from a variety of accomplishments. This learner is guided by values consistent with personal religious-ethical beliefs, cultural traditions, and the common welfare of society.*
>
> *The image also reveals a methodical thinker who is capable of inquiry, analysis, synthesis, and evaluation, as well as a perceptive discoverer capable of resourcefulness, intuition, and creativity.*
>
> *Lest it be thought that this image of the learner is too idealistic or valid only for students in advanced stages of cognitive development, it should be noted that in the educational system of this province even young children and older ones with learning disabilities are perceived as moving towards this image; in other words, it applies to all learners potentially. The point is that the kind of education provided for the learner envisaged here is quite different from what would be provided for a learner who was envisaged, for example, as requiring a strictly regimented program comprised largely of information to be assimilated or a reluctant learner who had to be coerced and directed at each step towards the acquisition of knowledge. Thus, the very goals of education flow from the image of the learner for whom the education is being provided.*
>
> *The image of the learner held by the ministry relies as much on the process as the content of learning because it is through the process that young people become lifelong learners who have, as C. P. Snow says, "the future in their bones" as well as the past in their heads. The inquiring mind and the contemplative spirit can carry them into the uncertain and possibly threatening future with confidence, resourcefulness, and integrity.* (Issues & Directions, *June 1980, page 3*)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Goals of Education

The Ministry of Education and the local school boards share the responsibility for public education, that is, the formal schooling of our children: schooling that provides equal educational opportunity for all. The goals of education for the Province of Ontario are to help students:

- develop a responsiveness to the dynamic processes of learning;
- develop resourcefulness, adaptability, and creativity in learning and living;
- acquire the basic knowledge and skills needed to comprehend and express ideas through words, numbers, and other symbols;
- develop physical fitness and good health;
- gain satisfaction from participating and from sharing the participation of others in various forms of artistic expression;
- develop a feeling of self-worth;
- develop an understanding of the role of the individual within the family and the role of the family within society;
- acquire skills that contribute to self-reliance in solving practical problems in everyday life;
- develop a sense of personal responsibility in society at the local, national, and international levels;
- develop esteem for the customs, cultures, and beliefs of a wide variety of societal groups;
- acquire skills and attitudes that will lead to satisfaction and productivity in the world of work;
- develop respect for the environment and a commitment to the wise use of resources;
- develop values related to personal, ethical, or religious beliefs and to the common welfare of society.

The Role of the Ministry of Education

The Ministry of Education shares accountability for the quality of public education in Ontario. Through the Education Act, regulations, circulars, numbered memoranda, and guidelines, the ministry sets policy providing direction for the educational systems of the province.

The Ministry of Education develops the broad goals of education and specifies major objectives and expectations. The ministry also provides the basis for common learning activities and core content through provincial curriculum guidelines and circulars. In addition, it has a major role in the monitoring and review of provincial curriculum policy.

Curriculum in the classroom is shaped by policy statements in subject guidelines and circulars. Learning expectations, including student achievement, are identified; organizational approaches are suggested; and anticipated changes in teaching strategies, materials, and beliefs are outlined. These are intended to be adapted to diverse communities in the province in both the French- and English-language sections, as well as to a broad spectrum of student needs. This policy is clearly stated for both elementary and secondary education.

> *While the ministry provides direction and support in the curriculum process, "the major challenge falls to educators at the local level to translate the objectives into relevant learning experiences for each of our children."* (The Formative Years, *1975, page 1*)

> *Primary responsibility for the planning of curriculum lies with the principal and teachers of the school working in conjunction with supervisory officers and other educators employed by their school board.* (Ontario Schools, Intermediate and Senior Divisions, 1984, *page 12*)

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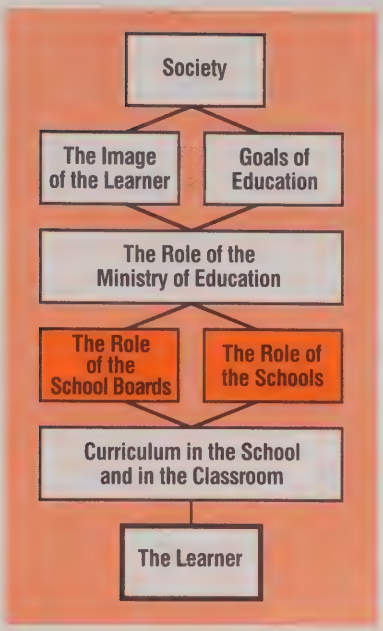
Ontario Schools, Intermediate and Senior Divisions, 1984, page 12.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The Role of the School Boards

Along with assuming general responsibility for curriculum review, development, and implementation strategies, the ministry expects that each school board, including the French- and English-language sections where appropriate, will develop a coherent overall curriculum-management procedure. The ministry is committed to assisting school boards in planning, preparing, and improving their CRDI management.

The policies outlined in ministry circulars and guidelines are mandatory for school systems, schools, and teachers. School boards, and where appropriate the French- and English-language sections, are, through their supervisory officers, responsible for reviewing, developing, and implementing programs and courses of study that are based on provincial curriculum guidelines and circulars and that accommodate local needs and objectives.

Supervisory Officers

Supervisory officers have important leadership responsibilities with respect to the review, development, and implementation of local curriculum that meets provincial and local expectations. The Education Act and related statutes outline the curriculum duties of school board trustees, supervisory officers, principals, vice-principals, department heads, resource staff, teachers, and students.

The Role of the Schools

The school is perhaps the most crucial component of the educational system since the major responsibility for planning and implementing the classroom curriculum rests here. The school must build on policies outlined in ministry circulars and guidelines and in school board directives when developing programs.

Principals

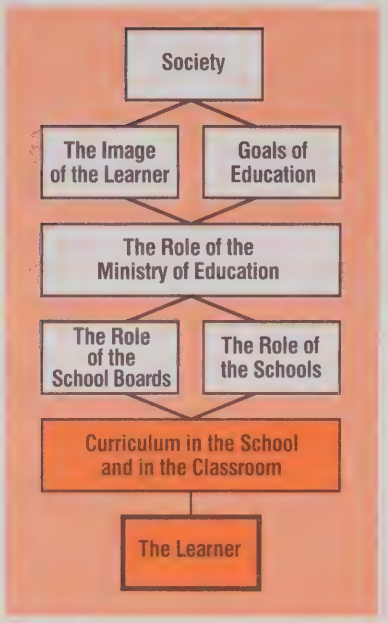
Principals have specific leadership responsibilities with respect to implementation and review procedures, as well as the variety and quality of programs provided for all the students in their schools. Principals play a major role in influencing the outcome of curriculum activities in the schools. They need to have the appropriate skills and knowledge for this role. At the school level the curriculum must address the learning needs of every student by considering such things as the placement of students, course levels, program adjustments, and student exceptionalities.

> *It is considered appropriate, therefore, for each school to select its own program from amongst the various provincial guidelines and to develop its own courses of study based on these guidelines and local curricula to meet the needs, interests, and abilities of the students in its community.* (*OSIS, page 2*)

Teachers

The teacher's role becomes that of the final curriculum decision-maker and primary facilitator of learning. Teachers provide valuable insights into the nature and needs of the students, the choice of content, and the practical aspects of classroom activities. In all phases of curriculum work their expertise and experience are needed to make the process realistic.

> *Once the school has established its program directions, "teachers have the responsibility of selecting strategies, resources, and activities appropriate to the needs of individual children, who should then be involved in setting short-term objectives, in devising ways and means of accomplishing tasks, and in choosing activities."* (The Formative Years, *page 3*)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Curriculum in the School and in the Classroom

The Ministry of Education regards curriculum as including all those experiences of the student for which the school is responsible. Curriculum is concerned not only with what should be experienced, but also with why, when, where, and how particular kinds of learning should take place, and the atmosphere in which learning occurs. Curriculum, therefore, is concerned with all human interaction in the school, with the respect which children are accorded, and with the values, aims, objectives, and decisions of the school community.

The image of the learner as a self-directed problem-solver, the goals of education, and the definition of curriculum provide a powerful focus for the classroom. The resulting learning environment could be characterized in some cases by:

- teaching that encourages the active involvement and participation of students;
- a recognition of students' unique abilities, learning styles, and pace of development;
- an effort to make learning a personal experience through flexible learning arrangements;
- the encouragement of creativity, the development of life skills, and the provision of appropriate challenges;
- strategies that involve students solving problems at an appropriate level, managing resources, and tackling issues for which there are no "right" answers;
- programs that are adapted to meet the needs of students and the school community.

The Learner

The student is the principal participant in the dynamic process of learning and the main reason for the existence of the educational system. The purpose of this curriculum process, therefore, is to ensure that each student has a relevant education suited to his or her needs and abilities. A sound curriculum is one that considers the needs of individual students in the context of the needs of the community in which they live. Review and implementation, as part of a management cycle, keep the curriculum up to date and current in the classroom.

To ensure a classroom climate that reflects the image of the learner and the provincial goals of education, the ministry and school boards develop curriculum policies that take into account:

- the need for responsiveness to societal trends, as well as the perceived needs and characteristics of young people;
- current developments in educational theory and knowledge;
- long-range planning, the rational ordering of priorities, and the feasibility of implementation;
- the importance of clear lines of responsibility and accountability among all parties involved in the educational process;
- the need for consultation, communication, and co-operation among the ministry, school administrators and teachers, and other interest groups.

II. Curriculum Review, Development, and Implementation

Figure 2: *The Basic Curriculum Cycle*

Curriculum review, development, and implementation form a cyclic process with considerable overlap among the phases.

Overview of the Cycle

Curriculum review, development, and implementation form a cyclic process with considerable overlap among the phases. The CRDI cycle is a fundamental yet dynamic concept in curriculum activity. Each segment of the cycle is connected to the others: among them a synergism develops which results in a process designed to bring improved education to the classroom and the students.

The **review** phase of the cycle involves the systematic gathering, analysis, and interpretation of data concerned with the quality of school programs and student achievement, and is used in making decisions that will facilitate progress towards the achievement of educational goals. The **development** phase involves the creation and updating of programs in the light of societal and student needs and thus results in new or refined policies, programs, and guidelines. The **implementation** phase involves the translation of policies and intended programs into classroom practice and actual learning experiences. Findings from the review phase usually lead to development activities, but can also quite naturally lead to the revision of implementation initiatives.

Specific tasks involved throughout the phases of the CRDI cycle are summarized in Figure 3.

Figure 3: *Curriculum Review, Development, and Implementation Tasks*

Review
- define the evaluation "problem"
- choose an appropriate methodology
- plan for data collection, analysis, and reporting
- collect and compile data
- analyse and report data

Development
- identify goals and objectives for the new/revised curriculum
- develop growth schemes (for students)
- sequence and package learnings into units
- develop teaching techniques
- develop assessment strategies
- prepare resource materials

Implementation
- identify desired status indicated by new curriculum
- develop stages of professional growth (for teachers and others)
- determine current status and diagnose obstacles to change and growth
- develop strategies to overcome obstacles
- develop and carry out implementation program
- monitor growth (in implementation) including long-term support for consolidation

Figure 4: Curriculum Cycle With Feedback Loops

Within each of the three phases, a similar CRDI cycle or feedback loop occurs that serves as a self-correcting mechanism.

Recurring Cycles Within Each Phase

Within each of the three phases, a similar CRDI cycle or feedback loop occurs that serves as a self-correcting mechanism (see Figure 4). For example, in the development phase, provincial guidelines or support documents are submitted in draft form to representative educators in the field for review. The feedback thus obtained is used to further develop the documents before they are distributed throughout the province. During the implementation phase, the plans, timelines, and levels of use are often reviewed in consultation with local supervisory officials. In the review phase, instruments for data collection are developed and field-tested for validity.

Although simple in theory, the CRDI cycle is complex in practice. Excellent communication and co-operation among all partners in each phase and feedback loop of the cycle are essential to maintain a continuous, vigorous program.

The cycle is an ongoing process, in which responsibility for the various phases is shared by the Ministry of Education and the school boards. The ministry has primary responsibility for the review and development phases of curriculum policies and programs. Local school boards have primary responsibility for the implementation phase. As school boards review, develop, and implement their own programs, local CRDI cycles occur.

The CRDI Cycle in the Provincial Context

The Ministry of Education has adopted "review, development, and implementation" as a major concept in its curriculum work. While the responsibilities of various branches and regions overlap, the CRDI cycle provides a framework for planning, organizing, and conducting curriculum activities.

The Review Phase

In the provincial context "review" refers to monitoring and assessing policy, related practice, and outcomes. The Ministry of Education has been conducting provincial reviews since 1977 to assess programs and determine the extent to which policy has been implemented. Results are shared in Provincial Policy/Program Review Reports. The monitoring and analysis of social and educational trends in the province constitute an important aspect of the ministry's overall review function, as does the assessment of student achievement. Contractual research and data from statistical reports provide additional information for decision making by ministry personnel. Large-scale study projects such as the Secondary Education Review Project or the Early Primary Education Project are undertaken when major shifts in policy are considered. Surveys and inquiries are used when data are needed quickly or in-depth evaluations are sought. The regional offices of the Ministry of Education allocate a significant portion of their resources to the review activities of the CRDI cycle. Since 1972, the ministry has also provided considerable assistance to school boards in local reviews through a process called "Co-operative Evaluation and Development of School Systems".

The Ministry of Education has produced the Ontario Assessment Instrument Pool and the French-language Banque d'instruments de mesure de l'Ontario. The instruments from these optional pools are used to assess student achievement relative to the objectives stated in ministry curriculum guidelines and to evaluate the effectiveness of programs at the classroom, school, and school board levels.

It is considered appropriate, therefore, for each school to select its own program from amongst the various provincial guidelines and to develop its own courses of study based on these guidelines and local curricula to meet the needs, interests, and abilities of the students in its community.

Ontario Schools, Intermediate and Senior Divisions, 1984, page 2.

The Development Phase

At the provincial level, "development" leads to the establishment of policies which are then embodied in circulars and guidelines. When needed, resource documents are produced to support the policies.

Ministry of Education curriculum-development projects are carried out by committees that usually include both French- and English-speaking educators. The expertise of professional writers, seconded experts, and contracted specialists is also used. Provincial curriculum committees include teachers nominated by the Ontario Teachers' Federation. For the development of Ontario Academic Courses, representatives are nominated by both the Council of Ontario Universities and the Association of Colleges of Applied Arts and Technology.

Ministry of Education curriculum-writing committees produce draft materials that are sent to educators across the province for extensive validation. Numerous revisions are made before the documents are finalized.

The Implementation Phase

In the provincial context, "implementation" refers to the communication and interpretation of policy to educators in school boards, and the orientation of those educators to anticipated changes in attitudes, teaching strategies, and materials. Ministry provincial implementation teams provide leadership and co-ordination within the regions of the province. Their responsibilities involve the development of strategies that will identify the need for change, clarify objectives and desired outcomes, and identify the resources required to accomplish the desired change. In addition to ministry staff, seconded staff may be required for the implementation phase to assist boards in planning when supplementary subject expertise is needed. The strategies may also include the involvement of regional curriculum councils, regional curriculum forums, faculties of education, the Ontario Teachers' Federation, supervisory officers' associations, and the field offices of the Ontario Institute for Studies in Education.

Regional offices are responsible for the communication and interpretation of ministry policy to school boards. In addition, regional offices are committed to providing assistance in planning implementation and to facilitating sharing among boards to assist the implementation process. Regional offices also monitor school board implementation processes; provide direct curriculum services, including personnel and materials to some boards; and sponsor curriculum research with other boards.

The CRDI Cycle in the School Board Context

Although the strategies developed may vary from board to board, a well-planned CRDI management process provides many benefits for school systems. School board trustees and administrators can agree on major curricular emphases to be pursued and are able to commit the resources of the board – financial, material, and human – to those ends. Professional-development programs can be designed to support these curricular directions. Methods for evaluating student achievement and program quality can be tailored to support major curricular thrusts. Long-term support and follow-up procedures can be focused on effective implementation and the consolidation of improvements. Principals and teachers can be assisted in developing new skills and knowledge.

Note: In all instances where reference is made to the CRDI cycle plans and procedures of school boards, it is expected that the French- and English-language sections will have their own unique approaches especially designed to meet the needs of the students they serve.

The Review Phase

In the school board context, review refers primarily to evaluating the quality and extent of implementation of local programs. Review focuses on many indicators of program effectiveness including student achievement, the use of resources, and the quality of staff-development activities. Valid review data can lead to renewed implementation or further curriculum development. Each school board is encouraged to have in place procedures for review. These should

include components which are related to staff involvement, the planning process, and assessment activities.

Procedures related to staff involvement include:

- arranging for the participation of principals and teachers at all levels of planning, decision making, and reporting;
- identifying roles of personnel involved in the review process;
- identifying required in-service education for the use of review methods.

Procedures related to the planning process include:

- establishing timelines for monitoring and evaluating activities;
- identifying the resources required for such review activities;
- communicating conclusions and recommendations that emerge from evaluative activities.

Assessment activities include:

- determining basic questions to be asked;
- identifying expected student learnings in the light of the image of the learner implicit in curriculum guidelines and circulars;
- relating the assessment instruments and procedures to identified objectives;
- triggering needs assessments in curricular areas scheduled for renewal and/or revision;
- providing for the collection and analysis of data.

Review can also be used effectively to monitor the processes used in all CRDI initiatives and to determine the effectiveness of each of the major steps in a cyclic curriculum model.

The Development Phase

At the school board level, "development" refers mainly to the creation of programs, courses of study, and resource documents. In many school boards second-generation documents are created from ministry guidelines. At the school level, responsibility for curriculum development and the production of courses of study rests with the principal and teachers under the direction of a supervisory officer.

Some boards make a point of examining the curriculum documents produced by other boards with a view to purchasing and adapting them for their own use, if they are available. In some cases a board will work co-operatively with one or two other boards on the development of curriculum materials.

Learning experiences should be planned not only to achieve the stated objectives but also to accommodate the diverse learning styles of students. Also, both learning experiences and teaching approaches should be appropriate for the level of difficulty at which the material is being studied. Evaluation of student achievement should support the established image of the learner and should form an integral part of the learning process. Evaluation techniques should be consistent with the objectives, congruent with the teaching strategies, and varied enough to produce a full assessment of what has been achieved.

Principals and teachers planning courses of study should consider the characteristics, abilities, career aspirations, language of instruction, and personal-development needs of the students for whom the courses are intended; the expectations of the community and of the world of work; the need to select from a broad range of content material that provides scope and balance; and the need to provide coherence and unity and a suitable sequence in the presentation of course material.

Each school board is encouraged to have in place procedures for development. To be successful, initiatives should be carefully co-ordinated and should include attention to staff involvement, the planning process, and production activities.

Procedures related to staff involvement include:

- identifying the person or work group responsible for the task;
- appointing a design/writing team;
- encouraging team-building skills;
- providing an opportunity to develop a common orientation about the nature of curriculum and the image of the learner;
- developing curriculum-design skills for the principals and teachers involved.

Procedures related to the planning process include:

- developing a detailed plan;
- identifying and approving timelines;
- establishing and approving a budget;
- diagnosing the degree of change required;
- developing appropriate measurement techniques for the anticipated learnings;
- establishing criteria for evaluating the quality of the curriculum which has been developed.

Production activities include:

- making a commitment to preserve the intention of the curriculum process: to bring about change in the classroom and to improve education for students;
- identifying major goals, course objectives, and learning outcomes;
- identifying, in general terms, the knowledge, skills, and affective learnings to be acquired by students;
- developing a sequence of key knowledge components and some levels of growth or student development;
- developing instructional strategies;
- validating new documents through pilot/field-testing procedures;
- performing ongoing needs assessment during the development phase;
- recognizing the required implementation strategies including the identification of personnel, resources, and potential obstacles;
- identifying needed teaching/learning resources.

The Implementation Phase

It is the responsibility of the school boards, through their supervisory officers, to develop local programs that are consistent with the rationale of provincial policy and, at the same time, reflect local needs and priorities. School boards are also responsible for co-ordinating implementation procedures at the school level in both official languages where needed. In-service education, coaching, external support, and the innovative use of resources are essential components. These initiatives involve a learning process whereby individuals and groups come to understand and express new curriculum intentions through classroom practice. Such intentions promote student interaction with the curriculum rather than direct transmittal from teacher to student. Each school board is encouraged to have in place procedures for implementation. These procedures should reflect the importance of implementation in bringing revitalized curriculum to the classroom and should recognize the amount of time and attention that will be necessary for effective change to take place. Plans for implementation are usually quite extensive and should include staff involvement, the planning process, and support activities.

Procedures related to staff involvement include:

- identifying leadership roles for supervisory officials, principals, consultants, heads of organizational units, and teachers;
- establishing implementation teams;
- providing appropriate in-service education and other kinds of activities that will facilitate needed changes in educational beliefs, practices, and materials;
- creating opportunities for coaching and for teachers to exchange ideas and to share experiences and practices;
- providing assistance within each school with staff development, changes in courses of study, and the use of resources.

Procedures related to the planning process include:

- developing a system-wide implementation plan which is validated at the school level;
- providing a budget;
- establishing realistic timelines;
- developing school or department implementation plans;
- developing criteria related to levels of use in the stages of implementation.

Support activities include:

- developing guides and resource materials for local use;
- familiarizing teachers with new curriculum materials;
- monitoring system, school, and classroom implementation processes;
- providing support for the principal and teachers over a long period to maintain and consolidate the new program.

The concept of planned change for curriculum improvement implies that a continuing effort will be made at the local level to encourage meaningful changes in classroom practice, the professional growth of teachers, the development of a positive learning environment in schools, and stronger school-community relationships. This concept also implies ongoing curriculum review, development, and implementation. As the learners' needs alter in response to societal changes, the curriculum, too, must change. At the same time, as special individual needs are respected, continuity and balance must be maintained. Commitment to a dynamic and coherent curriculum will enable educators to fulfil their obligations to the public and to the students.

III. Activating the CRDI Cycle

A Sample Curriculum-Management Matrix

The CRDI cycle within a school board or language section can be activated in various ways: by the release of a ministry guideline, by trustee initiatives such as a decision to institute immersion French, or by an administrative initiative such as a new emphasis on the development of language across the curriculum. Teacher initiatives, such as the development of elective programs, or public initiatives, such as the establishment of a heritage language program, may also mark the beginning of activity for the cycle. This process, wherein change is being translated into a system-wide program, is complex and will vary depending on the size of the board, the languages of instruction, the resource base of the system, and the skills of the personnel available. Many persons can be involved in a variety of organizational units throughout the school system, and the change can take place over an appreciable period of time. The characteristics of the people involved, their experience, levels of expertise, readiness for change, philosophies of education, and attitudes towards students will add to the complexity of the process. In order to clarify the process, the objectives, tasks, and responsibilities involved in the CRDI cycle are outlined in the following sample curriculum-management matrix (Figure 5). (It may be advantageous in some jurisdictions to adopt a different allocation of responsibilities from that shown in the matrix.)

Though cyclic in nature, the CRDI model is represented here as a linear series of activities. However, while this format may be useful to some readers, it should be stressed that it does not adequately depict the complex interrelationships among the phases or the cyclic nature of the process as a whole, with its many feedback loops.

Of special note is the first section of the matrix which addresses an overriding general concern for managing the CRDI process. Tasks and activities which impinge on the entire cycle and require continuous attention are outlined in this section. Also of note is the fourth column of the matrix which includes points to consider that highlight both personal interactions and strategies to be accommodated in putting the CRDI cycle in motion. How each of the tasks and activities will be approached will depend not only on the styles of leadership adopted and the nature of the staff involved but also on the local resources available in the individual school board or language section.

Although the matrix may appear to be a checklist and may perhaps be seen by some readers as a simple mechanistic approach to curriculum change, it is intended to be used only as a starting point for the management process. Much thought, reconsideration, debate, and argument is inherent in any process that leads to meaningful change. Given the dynamic nature of the process of education and complex interpersonal relationships that play a part in it, creative and sensitive leadership is needed to ensure that the tasks outlined in the matrix achieve the intended goal.

(For an in-depth, practical treatment and procedural suggestions, the reader may wish to refer particularly to *Curriculum Implementation: A Framework for Action*, *Curriculum Implementation: A Resource Booklet*, and *Planned Educational Change Through the Process of Curriculum Review, Development, and Implementation (CRDI)*. See reading list on pages 29 to 31 for full details.)

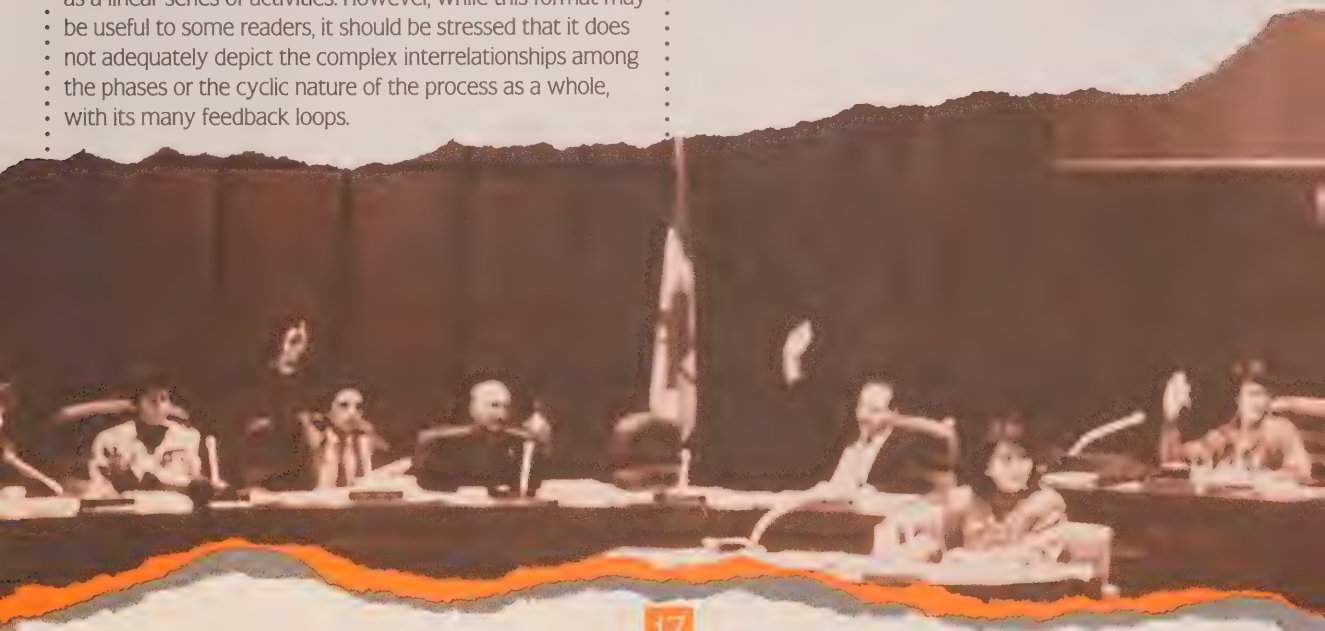

Figure 5: *A Sample CRDI Curriculum-Management Matrix*

Throughout this chart, all references to school boards or systems include the French- and English-language sections where applicable.

General Management Concerns

Task	Activities	Responsibility	Points to Consider
■ manage the process	■ become familiar with ministry policy documents	■ director, supervisory officer	Curriculum management needs overall co-ordination to tie together the three phases of the CRDI cycle and to ensure that both theory and its application in practice are well understood. Careful timing, in-service training for staff, and widespread communication are vital for effective curriculum leadership. Some points to be considered in this area are: ■ What decision-making process is best for establishing curriculum priorities? ■ When should funds be allocated to curriculum projects? ■ What are the best roles for trustees in the curriculum process? ■ Who needs to be familiar with ministry guidelines and circulars? to what extent? ■ How can specific subject curricula be fitted into an overall generic curriculum process? ■ How can sound theory, practicality, and effectiveness be built into the CRDI procedures? ■ How will the quality of the curriculum at the classroom level be assessed?
	■ identify person(s) (CRDI work group) responsible for curriculum management on a system-wide basis; preferably include those who will be affected	■ director
	■ develop a detailed plan for curriculum management that: – addresses each phase of the CRDI cycle – establishes manageable curriculum initiatives – identifies leadership roles throughout the system – establishes timelines – identifies resources required – establishes a budget	■ supervisory officer, resource staff, CRDI work group
	■ obtain board support and approval of the curriculum-management plan including curricular emphases, timelines, and budget	■ director, supervisory officer
	■ continuously monitor, assess, and update the plan; include board approval for substantive changes	■ director, supervisory officer
	■ collect data to identify effectiveness of each major step in the curriculum-management model	

Review Phase

Task	Activities	Responsibility	Points to Consider
■ define the evaluation "problem"	■ identify the review team, including relevant principals and teachers ■ conduct team-building sessions; include opportunities to discuss orientation to students and curriculum ■ record initial statement of evaluation "problem" ■ identify all users of the results of evaluation ■ identify potential decisions to be made based on the results ■ generate a priority list of potential decisions ■ develop general rules for making such decisions	■ supervisory officer ■ supervisory officer, CRDI work group	It is essential to examine thoroughly the reasons for conducting a review and to define the issues surrounding curriculum quality and delivery. Some points to be considered in this area are: ■ What criteria could be used for evaluating the current curriculum? ■ What is the prevalent view of the nature of the learner and what strategies are to be used to accommodate this view? ■ Does the school system have an official statement of educational philosophy? Is it up to date? Is it considered to be valid? ■ To what extent can one reasonably expect the intended curriculum to be implemented? ■ Who will use the information gained from the review? ■ How will the information be used? What decision-making rules will be applied?
■ choose an appropriate methodology	■ identify the specific questions to be asked ■ identify the best sources of information ■ identify the best ways of collecting information from each source ■ identify the best overall design for the review ■ select the best way of collecting data and the size of the sample for each question ■ select the best form of data for the method of analysis to be used for each question ■ prepare a methodological package	■ supervisory officer, CRDI work group, review team	The methodology for the review will vary according to its purpose, its audience, the resources available, and the decision-making process to be used. It could involve such diverse methods as an opinion survey, classroom observation, parent interviews, co-operative comprehensive system evaluation, or matrix testing of student achievement. Some points to be considered in this area are: ■ In view of the purpose of the review and the nature of the information sought, what should be the scope and depth of the review? How much time can the staff be expected to devote to it? ■ How large should the review sample be? ■ Over what period of time should the review take place? ■ What sources of information need to be tapped? ■ To what extent are the final users of the information to be involved?
■ plan for data collection, analysis, and reporting	■ develop a plan for the review that includes: – instrument development – in-service activities – sample selection – a schedule of activities – drafting letters, memos, and other correspondence	■ review team	A well-designed plan is vital for success. Effective communication is no less essential; all those affected must have a thorough understanding of the plan and must be in agreement on its basic points. Some points to be considered in this area are: ■ When will the review plan be validated and communicated to all concerned? ■ How will feelings of threat and anxiety be overcome? ■ In what manner will the final report and recommendations be communicated? ■ What extra funds and release time will be needed? ■ Who will need to approve the plan and when?
	■ validate the plan with all concerned ■ identify the personnel responsible for each activity ■ plot each activity in chronological order to form a schedule	■ review team	

Review Phase (continued)

Task	Activities	Responsibility	Points to Consider
■ collect and compile data	■ conduct in-service education for the reviewers ■ develop and/or select instruments ■ prepare instruments for use; field-test ■ select samples and make personal contacts ■ establish working relationships with people supplying the data ■ collect data, using the instruments ■ compile the data	■ supervisory officer, CRDI work group, review team	For those collecting data, sensitivity and consideration are important attributes. One must be sensitive to both the people from whom the data are being collected and to peripheral issues surrounding the topic. Some points to be considered in this area are: ■ Who will be selected to gather the data? ■ What in-service education will be needed? ■ Where will the procedures and instruments be field-tested? ■ How are the data to be compiled?
■ analyse and report data	■ summarize the data; determine validity of results ■ synthesize the results, using the rules for making decisions ■ identify conclusions that are supported by data ■ prepare report including recommendations for action ■ assess the process used and the quality of the data and the report	■ review team ■ supervisory officer, CRDI work group, review team	The final report and the recommendations must be clear, concise, and relevant for the intended audience. Some points to be considered in this area are: ■ How will the quality of the report be assessed? ■ Who should receive the report? ■ What steps will be taken to ensure it has maximum impact? ■ What follow-up activities will be conducted to monitor the recommendations?

Development Phase

Task	Activities	Responsibility	Points to Consider
■ identify goals and objectives for the new/revised curriculum	■ participate in ministry familiarization process ■ distribute ministry policy documents to board and school staff ■ ensure that all parties are familiar with those aspects of policy that most concern them ■ discuss interpretations and clarify implications at each level of responsibility ■ develop criteria for selection of writing team ■ establish writing team ■ provide team-building opportunities ■ review current board curriculum in light of anticipated changes in beliefs, teaching practice, and materials in new ministry curriculum document(s) (needs assessment), ensuring input from various sources ■ provide professional development in curriculum design and writing skills ■ determine nature and degree of changes required ■ identify aims and objectives related to changes ■ establish criteria for the quality of the work to be produced	■ supervisory officer, CRDI work group ■ supervisory officer, CRDI work group ■ CRDI work group, writing team ■ supervisory officer ■ supervisory officer, CRDI work group, writing team	A variety of people may be assigned the task of curriculum development. In all likelihood they will need considerable time to reach consensus on such basic concerns as the image of the learner and the general principles underlying their teaching strategies, issues that strongly influence the setting of goals and objectives. Some points to be considered in this area are: ■ How are the findings of the review phase or the result of a gap analysis to be used? ■ What readings and discussion are needed to broaden the perspective of the writing committee? ■ Do the majority of teachers and parents believe in a transmission mode of education, or a transaction mode, or are they at a transformation stage? ■ What quality-control mechanisms will work for this project? ■ Where can other suitable curriculum materials be found? How will they be evaluated? Can development be shared with other school boards?

Development Phase (continued)

Task	Activities	Responsibility	Points to Consider
■ develop growth schemes (for students)	■ identify expected student learnings ■ provide opportunities for input from all parts of system	■ writing team	Regardless of the subject matter, or the skills and attitudes to be acquired, the growth and development of students tend to progress from simple to complex. Learning proceeds from concrete to abstract, from random to ordered, from broad to precise, from dependent to independent. This progression is not necessarily linear or spiral, but depends largely on the interaction of the teacher, the student, and the planned curriculum. Growth schemes or strands should be compatible with the curriculum objectives and the nature of the learners. Agreement among teachers is essential if these growth schemes are to be useful. Some points to be considered in this area are: ■ How can growth schemes be adapted to a variety of learning styles? ■ To what extent can individual needs and rates of learning be accommodated? ■ By what category should units be packaged? by content? skills? attitudes? the nature of the classroom materials to be used? ■ How and by whom will they be field-tested? ■ Can field-testing be designed as the beginning of implementation?
■ sequence and package learnings into units	■ put expected student learnings into a sequential order ■ field-test sequence and revise ■ package expected student learnings into units ■ field-test unit packaging and revise	■ writing team	
■ develop teaching techniques	■ develop a variety of learning experiences and teaching approaches to meet various student needs ■ provide in-service education for pilot-test participants ■ pilot and revise teaching strategies	■ writing team	Assessment and teaching should be closely related. The methods used for assessment of student achievement should be similar to the methods used for teaching. Students need to see a natural connection between learning and assessment, including peer- and self-evaluation. For this reason, teaching techniques and assessment strategies should be developed simultaneously and closely tied to the curriculum objectives. Some points to be considered in this area are: ■ Can the majority of the teachers handle the techniques being advocated? Will they need extra resources? Can "found" materials be used? ■ What use can be made of local environmental resources? ■ What is the best way to provide in-service opportunities for developing assessment techniques? ■ How can a local repository of good ideas concerning assessment techniques be established? ■ What proportion of evaluation should be based on term work? examinations? a product? written results? performance? thinking skills? attendance? ■ Who will design the methods of reporting to parents? ■ At what point should planning for implementation begin?
■ develop assessment strategies	■ design appropriate assessment strategies ■ ensure that assessment strategies are consistent with goals and objectives and reflect anticipated changes in beliefs, teaching practices, and materials ■ consider possible implementation strategies and activities, including the identification of criteria, personnel, and resources required, as well as potential obstacles	■ writing team	

Development Phase (continued)

Task	Activities	Responsibility	Points to Consider
■ develop written resource materials	■ prepare curriculum program documents ■ identify, obtain, and/or develop needed resource materials ■ provide in-service education for field-testing participants ■ validate program documents and materials in light of established aims and objectives through field-testing procedures ■ write final program documents and resource materials, incorporating suggestions obtained through field-testing	■ writing team ■ supervisory officer, CRDI work group, writing team	Excellent teachers are not necessarily excellent writers. Careful attention will be required in selecting the members of the writing teams, training them, and establishing procedures to be used by them. Some points to be considered in this area are: ■ What format is best for conveying ideas and for effective implementation in the classroom? ■ How much prescriptive detail and how much freedom to adapt the program should there be? ■ How can a creative and dynamic teaching/learning atmosphere be fostered? ■ What place do written materials have vis-à-vis workshops and seminars for conveying directions and motivating change? ■ When, by whom, and according to what criteria will final approval be given for the written materials?

Implementation Phase

Task	Activities	Responsibility	Points to Consider
■ identify desired status indicated by new curriculum	■ establish implementation teams, based on membership criteria ■ compare intentions of former and new curricula, focusing on change in teacher behaviour, beliefs, concerns, teaching strategies, use of materials, and student performance ■ describe clearly the need for change and the change required ■ develop long-term and short-term plans recognizing the importance of implementation and the time it takes for effective change to occur ■ identify key personnel in implementation activities	■ supervisory officer, CRDI work group ■ CRDI work group, implementation team	Implementation means putting the changes or new ideas into practice. To ensure the success of this process, it is important to work closely with staff to develop new skills and positive attitudes towards the planned changes. If changes in the program are to be effective, the commitment of all those involved in bringing them about is essential. Some points to be considered in this area are: ■ What modifications will be needed in previously prepared implementation plans now that the new curriculum materials have been developed? ■ Are the timelines realistic given the extent of change needed and other demands placed on the staff? ■ What prior experiences has the staff had with change processes in this board? Have they been positive or negative experiences? ■ Who is the catalyst in each school who must be active in the support of implementation activities?

Implementation Phase (continued)

Task	Activities	Responsibility	Points to Consider
■ develop stages of professional growth (levels of use for teachers and other staff)	■ provide in-service education as needed for key personnel ■ arrange expected changes in teaching strategies, beliefs, and use of materials to reflect anticipated teacher growth in a sequential manner ■ field-test stages of growth sequence and revise in accordance with results	■ supervisory officer, CRDI work group, implementation team	It is helpful to establish stages of professional growth or levels of use in discussing current classroom activities with staff and in planning ways in which they can progress logically and effectively towards the new curriculum. Some points to be considered in this area are: ■ How will levels of use be different for classroom teachers, principals, and administrators? ■ Who will be involved in developing these levels of use? ■ How will these levels of use become clearly understood and accepted by all staff? ■ In what ways will in-service activities for key implementers differ from those needed by other staff?
■ diagnose current status and obstacles to change and growth	■ delineate the change(s) required ■ identify gaps between current and desired teaching practice related to student learning ■ list potential obstacles in the sequence in which they would be expected to arise relative to desired changes in skills, knowledge, concerns, and resources	■ CRDI work group, implementation team	Although the approach may seem negative, identifying obstacles or barriers at the outset is one of the best ways to plan for change. This approach explicitly recognizes the concerns of those who are expected to implement the changes. Some points to be considered in this area are: ■ How will the concerns of the staff be acknowledged and attended to? ■ What concerns have already been expressed during the field tests? How will these be accommodated? ■ How will concerns and resulting action plans be communicated throughout the system? ■ What motivation for change will be most suitable given the range of experience and beliefs of the staff involved? ■ What strategies will be utilized to involve parents in understanding the curriculum changes?
■ develop strategies to overcome obstacles	■ define, with teachers, the change and compare present practice to desired change ■ attend to all teacher and principal concerns surrounding the anticipated changes (include parental concerns where necessary) ■ arrange appropriate in-service programs for staff, parents, and others that focus on the changes, concerns, and stages of growth for the implementation phase	■ CRDI work group, implementation team	
	■ field-test strategies and revise as required ■ carry out an inventory and acquire materials already in use which will help to meet needed changes	■ CRDI work group, implementation team	
	■ develop materials which will help to meet needed changes	■ implementation team	

Implementation Phase (continued)

Task	Activities	Responsibility	Points to Consider
■ develop and carry out implementation program	■ develop system-wide implementation plans ■ develop implementation guides and resource materials for local use (field-test and revise as required) ■ establish procedures to introduce the new curriculum program and related materials that will promote changes in classroom practice ■ provide resources where needed for system and school ■ support the development of individual school-wide plans ■ foster and support implementation activities within each school in areas such as staff development, use of resources, and changes in courses of study ■ develop specific, continuous in-service plans for teachers and principals ■ provide opportunities for coaching and sharing of ideas among teachers in formal and informal settings ■ provide in-service education sessions conducted by teachers, principals, and resource staff ■ design action plans for staff development in individual schools ■ support the development of a personal action plan with each staff member ■ develop plans to monitor system, school, and classroom implementation (growth)	■ supervisory officer, CRDI work group, implementation team, principals, teachers ■ implementation team	Implementation is a long-term process that needs careful thought and constant attention. Although many excellent resource documents and research studies that address this area are available, each school board is unique and will need to tailor its procedures to the needs and abilities of the staff involved with the curriculum change. Some points to be considered in this area are: ■ To what extent is variation in the rate and nature of implementation acceptable? ■ How will teachers know what is expected in the classroom? How will they know the change is worthwhile? ■ When will the following be in place? – effective in-service education opportunities – well-defined implementation roles – appropriate resources – teaching, learning, and evaluation strategies congruent with the new curriculum
■ monitor growth in implementation and provide long-term support for consolidation	■ monitor and assist principals continuously to ensure they play a direct leadership role in facilitating the work of the staff ■ monitor and assist resource staff (consultants) to ensure that they play a facilitating role and offer technical assistance ■ monitor implementation through visits, reports, and meetings with key personnel ■ provide long-term external support to facilitate consolidation and maintenance of improved curriculum	■ supervisory officer ■ supervisory officer, principal ■ supervisory officer, principal	One of the prime causes of failure in implementation is the lack of long-term support for consolidation. A flurry of initial activity can die away without any permanent effect if it is not reinforced with continued support and concern over a long period of time. Some points to be considered in this area are: ■ What forms of maintenance will be most effective for the new program? ■ Are the levels of use that were previously established still appropriate at this stage of implementation? ■ How can monitoring take place at the classroom level? Can student achievement be a guide to implementation? ■ Do enrolment, attendance, retention, and student choices give an indication of the success of the program? ■ What place do exemplary practices have in continued implementation? What range of practice is acceptable? ■ How will the impetus for monitoring be maintained? ■ Who will be responsible for ensuring continued support for consolidation?

IV. Sharing

Sharing Within School Boards

One of the keys to a successful CRDI policy is the sharing of information in both formal and informal settings. Because the process is complex, information can easily become isolated in one part of a system. Mechanisms should be developed to facilitate the sharing of information about the CRDI procedures and content. The distribution of regular system newsletters to schools and the development of teachers' centres could be part of a planned sharing strategy within a CRDI process. It is essential that principals and teachers be well-informed so that review, development, or implementation can move forward smoothly.

A co-ordinated staff-development policy could provide opportunities for teachers with similar curricular responsibilities to exchange visits, to participate in coaching, to meet by division and/or grade for curriculum-exchange sessions, and to take leadership roles in the identification and provision of needed in-service opportunities.

School boards could establish curriculum councils to provide consultation and to monitor curriculum initiatives with representatives from teachers' federations, trustees, principals, and supervisory officers. The commitment of board personnel to promote the sharing of information is essential to the success of the CRDI process.

Sharing Among School Boards and Language Sections

School boards can provide additional opportunities for sharing ideas, materials, and personnel by moving beyond their borders. Resource staff in specific curricular areas could be made available to adjacent boards, or in-service activities could be planned co-operatively to enhance sharing of resources and to reduce costs. Regular curriculum meetings involving principals and teachers from more than one school board could be scheduled. These strategies are particularly important for small school boards.

Regional education councils provide directors of education with a vehicle for sharing successful experiences and problems related to specific curricular undertakings, with the clear possibility of receiving feedback in the form of advice and/or resources. Regional curriculum councils, or similar organizations, provide school board supervisory officers who have curriculum responsibilities with a forum for sharing program initiatives. The identification of available resources in the larger educational community is often a function of these meetings.

The continuous improvement of information technology has provided additional options for sharing information on an almost instantaneous basis. Networking among school boards would permit the rapid exchange of information via computer while the use of electronic bulletin boards would permit information to be shared instantaneously. In addition, requests for help with specific problems could be processed on receipt or on an overnight basis. A database within the ONTERIS system could include school board CRDI procedures and be an important mechanism for sharing information among school boards across the province.

The various partners in education – supervisory officers, teachers' federations, faculties of education, OISE field centres, and the Ministry of Education – have a wealth of curricular expertise that is available to the school boards in the province. Through collaboration, these partners can provide assistance at the request of a local school board. Such collaboration has the potential to improve greatly the quality of the local curriculum-management process. The regional offices of the Ministry of Education can play a key role in facilitating such sharing at many levels in the educational community.

Once the school has established its program directions, "teachers have the responsibility of selecting strategies, resources, and activities appropriate to the needs of individual children, who should then be involved in setting short-term objectives, in devising ways and means of accomplishing tasks, and in choosing activities."

The Formative Years, 1975, page 3.

V. Resources

Resources beyond a school board's jurisdiction may be required on occasion and are available from a number of sources across the province. Small school boards and language sections in particular should avail themselves of these resources.

Ministry of Education

In addition to the many support documents produced by the Ministry of Education, implementation teams with expertise in curriculum policy are available to assist board personnel during the initial phase of their CRDI cycle. The ministry is increasing its commitment to the provision of direct assistance by regional office staff to support school board administrators in their implementation activities. For school boards offering French-language education the ministry provides French-language consultative services – a team of curriculum experts that may be contacted through the French-language superintendents in the regional offices.

OISE Field Centres

OISE field centres have played a key role over the years in the development and refinement of CRDI procedures and strategies. Valuable human and material resources continue to be available on a short- or long-term basis. The staff of OISE field centres have recently prepared a manual entitled *Planned Educational Change Through the Processes of Curriculum Review, Development, and Implementation (CRDI)*. Practical in format, this manual should be of great assistance to school board administrators.

Faculties/Schools of Education, Colleges, and Universities

Personnel from the faculties and schools of education provide professional assistance to school boards in a number of ways, including participation in professional-development-day activities and the provision of short courses and specific certificate-upgrading courses. Such resources are useful in supporting school board CRDI activities.

A great, and as yet untapped, resource exists in the other faculties of universities and the staff of community colleges. The early contributions of the faculties and colleges to the Ontario Academic Course program indicates that school boards should take advantage of this valuable human resource in their curriculum-management endeavours.

Other School Boards and Language Sections

Frequently, specialized human and physical resources exist in individual school boards. Developing mechanisms to share these resources between boards and language sections can result in the saving of time and money for all involved, especially where adjacent boards have differing resource bases. School board administrators could negotiate equitable policies for such resource-sharing directly, or through the Regional Education Council, the Regional Curriculum Council, or similar organizations.

For school boards developing a French-language CRDI model, strategies for sharing between and among school boards, including those some distance away, could ensure the most effective use of the expertise available. Such sharing can often be facilitated by the French-language consultative service which may be contacted through the French-language superintendents in the regional offices.

Le Centre Franco-Ontarien de ressources pédagogiques

The Centre Franco-Ontarien in Ottawa has been an important resource for French-language curriculum activities in the past and will continue to be a resource as attention focuses on the integrated nature of the CRDI model.

Federations and Associations

The Ontario Teachers' Federation and its affiliates, as well as the supervisory officers' associations, have many fine publications that can be used to support the CRDI cycle. They also offer a range of in-service and professional-development opportunities related to review, development, and implementation.

Addresses

Ministry of Education Regional Offices

Enquiries should be addressed to a regional superintendent of education.

Central Ontario Region
Heron's Hill Building
Suite 3201
2025 Sheppard Avenue East
Willowdale, Ontario
M2J 1W4
(416) 491-0330

Eastern Ontario Region
1580 Merivale Road, 4th Floor
Nepean, Ontario
(613) 225-9210

Midnorthern Ontario Region
199 Larch Street, 7th Floor
Sudbury, Ontario
P3E 5P9
(705) 675-4401

Northeastern Ontario Region
Transportation and Communications Building
McKeown Avenue
P.O. Box 3020
North Bay, Ontario
P1B 8K7
(705) 474-7210

Northwestern Ontario Region
Ontario Government Building
435 James Street South, 1st Floor
P.O. Box 5000
Thunder Bay, Ontario
P7C 5G6
(807) 475-1571

Western Ontario Region
759 Hyde Park Road
London, Ontario
N6H 3S6
(519) 472-1440

Faculties of Education

Brock University
600 Glenridge Avenue
St. Catharines, Ontario
L2S 3A1

Duncan McArthur Hall
Queen's University
Kingston, Ontario
K7L 3N6

Lakehead University
955 Oliver Road
Thunder Bay, Ontario
P7B 5E1

Laurentian University
Sudbury, Ontario
P3E 2C6

Nipissing University College
Gormanville Road
P.O. Box 5002
North Bay, Ontario
P1B 8L7

University of Ottawa
651 Cumberland Avenue
Ottawa, Ontario
K1N 6N5

University of Toronto
371 Bloor Street West
Toronto, Ontario
M5S 2R7

University of Western Ontario
1137 Western Road
London, Ontario
N6G 1G7

University of Windsor
600 Third Concession
Windsor, Ontario
N9B 3P4

York University
4700 Keele Street
North York, Ontario
M3J 1P3

OISE Field Centres

Educational Leadership Centre
Althouse College
University of Western Ontario
1137 Western Road
London, Ontario
N6G 1G7

Midnorthern Centre
Prince Charles Public School
296 Van Horne Street
Sudbury, Ontario
P3B 1H9

Midwestern Centre
Victoria School
25 Joseph Street
Kitchener, Ontario
N2G 1H9

Niagara Centre
Connaught Public School
28 Prince Street
St. Catharines, Ontario
L2R 3X7

Northeastern Centre
King George Public School
550 Harvey Street
North Bay, Ontario
P1B 4H3

Northwestern Centre
Lakeview High School
285 Gibson Avenue
Thunder Bay, Ontario
P7A 2J6

Ottawa Valley Centre
60 Tiverton Drive
Nepean, Ontario
K2E 6L8

Principal Development Centre
252 Bloor Street West
Toronto, Ontario
M5S 1V6

Trent Valley Centre
150 O'Carroll Avenue
P.O. Box 719
Peterborough, Ontario
K9J 7A1

VI. Suggested Reading

English Resources

Apple, M.W. "Curriculum in the Year 2000: Tensions and Possibilities". *Phi Delta Kappan* (January 1983), pp. 321-26.

This article predicts the social tensions that will influence not only curriculum content and organization but also the decision-making processes effecting curriculum change in the future. It deals with establishing priorities that reflect societal values and with working creatively with conflicting community interests. The delivery of such a curriculum will involve the challenge of keeping teachers motivated and equipped with the appropriate skills.

Dow, I.; Whitehead, R.; and Wright, R. *Curriculum Implementation: A Framework for Action.* Toronto: Ontario Public School Teachers' Federation, 1984.

A handbook for implementation, this publication addresses the problems of the process at a practical level. An intervention model makes up the bulk of the text, followed by a number of planning strategies for effective implementation. The booklet identifies major barriers to implementation, provides a case study, and offers checklists related to communications, roles, time management, resources, and information.

Fullan, Michael. "Change Processes and Strategies at the Local Level". *The Elementary School Journal* 85 (1985), pp. 391-420.

Considerable attention is devoted in this article to an explanation of the actual processes of change. The author describes deliberate change as a complex, dilemma-ridden, technological, and socio-political process. While focusing on school and classroom changes, the author relates these to system-wide strategies. In the final section, alternative strategies, ideas, and guidelines that local personnel might employ are discussed. This paper is a good resource for further reading.

Fullan, Michael, and Park, Paul. *Curriculum Implementation: A Resource Booklet.* Toronto: Ministry of Education, Ontario, 1981.

The purpose of this booklet is to provide a foundation document that systematically describes the main elements involved in the implementation of new or revised educational programs (guidelines, resources, and policies, for example). The main factors affecting the outcome of implementation are outlined, along with tasks and strategies for planning effective implementation. The authors of this booklet offer twelve major sets of suggestions for improving the delivery of support resources and include ideas for follow-up activities.

Fullan, Michael. *The Meaning of Educational Change.* New York: Teachers' College Press; Toronto: OISE Press, 1982.

The first part of this book, "Understanding Educational Change", includes an analysis of the sources, meaning, and causes of change and discusses planning, execution, and how to cope with change. In the second part, the author considers the roles of teachers, principals, students, administrators, consultants, parents, and the community. "Guidelines for Coping" offers thoughtful suggestions for the practitioner.

Hall, Gene, and Loucks, Susan. "A Developmental Model for Determining Whether the Treatment Is Actually Implemented". *American Educational Research Journal,* vol. 14, no. 3 (1977), pp. 263-76.

The ability to determine whether a new curriculum is actually in use, and if so, how it is being used, is essential to the review portion of the CRDI cycle. The concept of "levels-of-use" profiles is described in this article as a means of refining research methods relating to implementation. Charts and graphs show samples of "levels of use" and their relationship to implementation and illustrate the validity of "levels-of-use" techniques. Although they are concerned mainly with research, the authors present many ideas that could be applied by administrators and teachers.

Joyce, Bruce, and Showers, Beverly. "The Coaching of Teachers". *Educational Leadership* (October 1982), pp. 4-10.

By means of a case study, this article outlines in practical terms the process of coaching, its essential components, the requirements for success, and some hazards to be avoided. The authors draw a parallel between athletic training and coaching for change in the classroom.

Leithwood, Ken; Stanley, Ken; and Montgomery, Deborah. "Training Principals for School Improvement". Paper presented at the Canadian Society for Study in Education, Vancouver, 1983.

This article describes five in-service programs for principals, emphasizing their impact on improvement in the school. The authors suggest effective alternatives to current practice, particularly in the diagnosis of entry behaviours, conceptions of growth, and individualized instruction. A profile of a principal is provided, portraying him or her as a key agent in managing curriculum change at the school level.

Leithwood, Ken, ed. *Planned Educational Change Through the Process of Curriculum Review, Development, and Implementation (CRDI).* Toronto: OISE Press, 1986.

Designed for those directly involved in CRDI activities, this "working manual" brings CRDI procedures together in one place. These procedures have been developed in considerable detail and field-tested in many Ontario school systems. Of particular interest are sections on planned change, curriculum orientations, establishment of priorities, and implementation of change. This manual complements the ministry booklet on curriculum management. It deals with many of the same concepts at a more detailed, school-oriented level.

Loucks, Susan, and Hall, Gene. "Implementing Innovations in Schools: A Concerns Based Approach". Paper presented at the annual meeting of the American Research Association, San Francisco, April 1982.

The Concerns-Based Adoption Model (CBAM) was designed to prompt efforts for more successful change, with the teacher as the focal point in the process of improvement. This paper describes the application of the model to curriculum implementation in six elementary schools, based on an analysis of teachers' concerns, related levels of use, and how these changed over time. The authors examine the effect of the actions of principals, facilitators, administrators, and evaluators on teachers' feelings and on the functioning of the new program.

Miller, John, and Seller, Wayne. *Curriculum Perspectives and Practice.* New York and London: Longman, 1985.

This text is intended to help practising and future educators to conduct curriculum activities from an integrated perspective. Part One describes three major curriculum orientations and how they can be used to analyse and design tasks. Part Two focuses on review, development, and implementation, presenting both a theoretical background and conceptual models. One chapter effectively addresses the personal and social aspects of implementation.

Ontario Association of Education Administration Officials. *Handbook on Implementation for Supervisory Officials.* Toronto: OAEAO, 1980.

This guide provides practical assistance to superintendents and directors of education who are responsible for implementing new or revised policies. It focuses on good planning, provides a framework for structuring tasks and activities, and suggests resources. Five key questions are posed for each phase of activity, centring on understanding, commitment, information, skills, and recognition of change. Five case studies of Ontario school boards are also examined.

Ontario Teachers' Federation. *Curriculum Policies of the Ontario Teachers' Federation.* Toronto: OTF, 1983-84.

The policies and working positions of the Ontario Teachers' Federation (OTF) are defined in this publication, along with areas of responsibility, teachers' rights, involvement in curriculum, and assessment. This booklet also outlines policies relating to teacher education and certification, French-language rights, school buildings, school leadership and organization, and special education services.

Purkey, S., and Smith, M. "Effective Schools: A Review". *The Elementary School Journal* 83 (1983), pp. 427-52.

In this article, the authors relate traditional literature on effective schools to theories of organizational change. They view the school as a complete entity in the change process and examine two influential variables: administrative procedures and the interaction of staff. They critique the research techniques and therefore the validity of the results of many studies, and question assumptions about cause and effect and top-down interventions. The authors offer a portrayal of an effective school, based on climate or culture and a strategy for change.

Stufflebeam, Daniel L.; Foley, Walter J.; Gephart, William J.; Guba, Egon G.; Hammond, Robert L.; Merriman, Howard O.; and Provus, Malcolm M. *Educational Evaluation and Decision Making.* Itasca, Ill.: F.E. Peacock Publishers, 1971.

This work, intended for a wide audience, puts forward a program evaluation approach based on the American experience. By exploring the curriculum, its bases, and its formulation through a process of evaluation, the authors show how evaluation can be used to help students make education-related decisions.

French Resources

Angers, Pierre, and Bouchard, Colette. *L'activité éducative: une théorie, une pratique. La mise en œuvre du projet d'intégration.* Montréal: Les éditions Bellarmin, 1984.

The authors present the various components of planned activities and stress the need to integrate them. The proposed integration is presented in a ten-phase mode.

Barbier, Jean-Marie. *L'évaluation en formation.* «Pédagogie d'aujourd'hui» Series. Paris: Presses universitaires de France, 1985.

This work is divided into two parts. Part I deals with the evaluation process and explores the function of each of the steps involved. Part II discusses the possible goals of an evaluation and examines the role of evaluation. This work is intended for people who have worked in evaluation and assumes prior knowledge of evaluation in a school context.

Bertrand, Yves, and Valois, Paul. *Les options en éducation.* «Point de vue...point de mire» Series. Québec: Éditeur officiel du Québec, 1982.

The purpose of this publication is to help educators assess the many options available in the education system. The authors outline the main features of each option and discuss their theoretical bases and characteristic structures.

Paquette, Claude (Co-ordinator). *Des pratiques évaluatives.* Victoriaville, P.Q.: Les éditions NHP, 1984.

This publication is the outcome of a symposium on evaluation practices. It consists of a series of texts, each of which deals with different approaches to evaluation at the level of the classroom and at the level of the education system or program.

Nadeau, Marc-André. *L'évaluation des programmes d'études: Théorie et pratique.* Montréal: Presses de l'Université Laval, 1981.

This work, designed for educators and education specialists, discusses the methodological, practical, and technical aspects of program evaluation. The text is divided into three parts: Part I outlines the various models currently in use; Part II discusses the practical aspects of program evaluation; and Part III explores the technical aspects: methods of investigation, assessment instruments, evaluation strategies, and statistical techniques.

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